

Title (en)

OPTICAL UNIT, BEAM COUPLING DEVICE, AND LASER PROCESSING MACHINE

Title (de)

OPTISCHE EINHEIT, STRAHLKOPPLER UND LASERBEARBEITUNGSMASCHINE

Title (fr)

UNITÉ OPTIQUE, DISPOSITIF DE COUPLAGE DE FAISCEAU, ET MACHINE DE TRAITEMENT AU LASER

Publication

EP 4067947 A1 20221005 (EN)

Application

EP 20894129 A 20200701

Priority

- JP 2019215505 A 20191128
- JP 2020025876 W 20200701

Abstract (en)

An optical unit (4) for guiding a plurality of light beams, includes a plurality of lens portions (51) through which the plurality of light beams are transmitted. The plurality of lens portions are arranged in an arrangement direction (X) that intersects an optical axis direction (Z) along which the light beams are transmitted. Each of the lens portions is inclined with respect to a thickness direction (Y) intersecting the optical axis direction and the arrangement direction. The optical unit has both end faces in the optical axis direction with a pitch at which the lens portions are arranged in one end face being smaller than a pitch at which the lens portions are arranged in another end face.

IPC 8 full level

G02B 3/00 (2006.01); **B23K 26/064** (2014.01); **G02B 5/18** (2006.01)

CPC (source: EP US)

B23K 26/064 (2013.01 - EP); **G02B 3/00** (2013.01 - EP); **G02B 5/18** (2013.01 - EP); **G02B 27/0944** (2013.01 - US); **G02B 27/0955** (2013.01 - US); **G02B 27/1006** (2013.01 - EP US); **G02B 27/1086** (2013.01 - EP); **G02B 27/123** (2013.01 - EP); **H01S 5/141** (2013.01 - EP); **H01S 5/4012** (2013.01 - EP); **H01S 5/4062** (2013.01 - EP); **H01S 5/4087** (2013.01 - US); **H01S 5/4087** (2013.01 - EP)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

US 11867919 B2 20240109; **US 2022260842 A1 20220818**; CN 114761835 A 20220715; EP 4067947 A1 20221005; EP 4067947 A4 20230308; JP 7479396 B2 20240508; JP WO2021106257 A1 20210603; WO 2021106257 A1 20210603

DOCDB simple family (application)

US 202217737139 A 20220505; CN 202080082052 A 20200701; EP 20894129 A 20200701; JP 2020025876 W 20200701; JP 2021561151 A 20200701